The Chilean Labor Market: Job Creation, Quality, Inclusiveness, and Future Challenges

Parro, Francisco and Reyes, Loreto

Finance Ministry of Chile

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The Chilean Labor Market: Job Creation, Quality, Inclusiveness, and Future Challenges[1]

Francisco Parro
Finance Ministry of Chile

Loreto Reyes
Finance Ministry of Chile

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Abstract

This paper analyzes recent labor market developments in the Chilean economy. The evidence shows a booming labor market with strong job creation since 2010. Most of the jobs created during the past three years are quality jobs—that is, jobs with a written contract and whose employers have made the corresponding payments toward pensions, healthcare, and unemployment insurance. We show that a combination of economic growth and specific policies seems to be the driving force behind the strong creation of quality jobs. Additionally, we show that the rapid job creation has been inclusive and constitutes one of the potential explanations for the fall in income inequality observed during the past three years. However, a further reduction in income inequality remains an important challenge for the future. Greater access to a quality education for vulnerable groups is the key to achieving that goal.

Keywords: Labor Markets, Inequality, Skills
JEL Classification: J21; J31; J24

[1] This document was prepared for the labor market chapter of the OECD survey. We would like to thank Aida Caldera, Sean Dougherty, Patrick Lenain, and Carla Valdivia for all useful suggestions and comments. Corresponding author e-mail addresses: fparro@hacienda.gov.cl (F. Parro), lreyes@hacienda.gov.cl (L. Reyes).

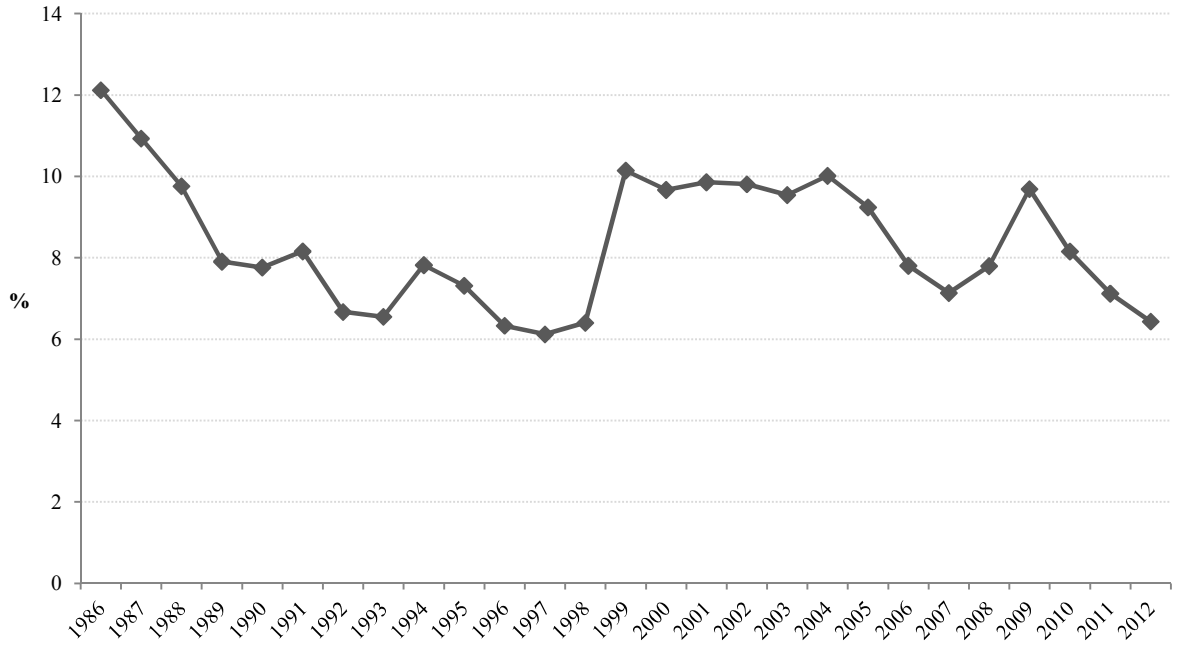
1. Overview of the Chilean labor market

1.1 Job creation

Chile has made remarkable progress in reducing unemployment over the last two decades. The unemployment rate began decreasing considerably after the subprime crisis, when it reached 9.6%, and in 2012 dropped to its lowest point (6.4%) of the last 14 years. Using data from Chile's National Institute of Statistics, Figure 1 presents the evolution of the unemployment rate since 1990.

The good performance of the Chilean labor market has also been reflected in job creation.

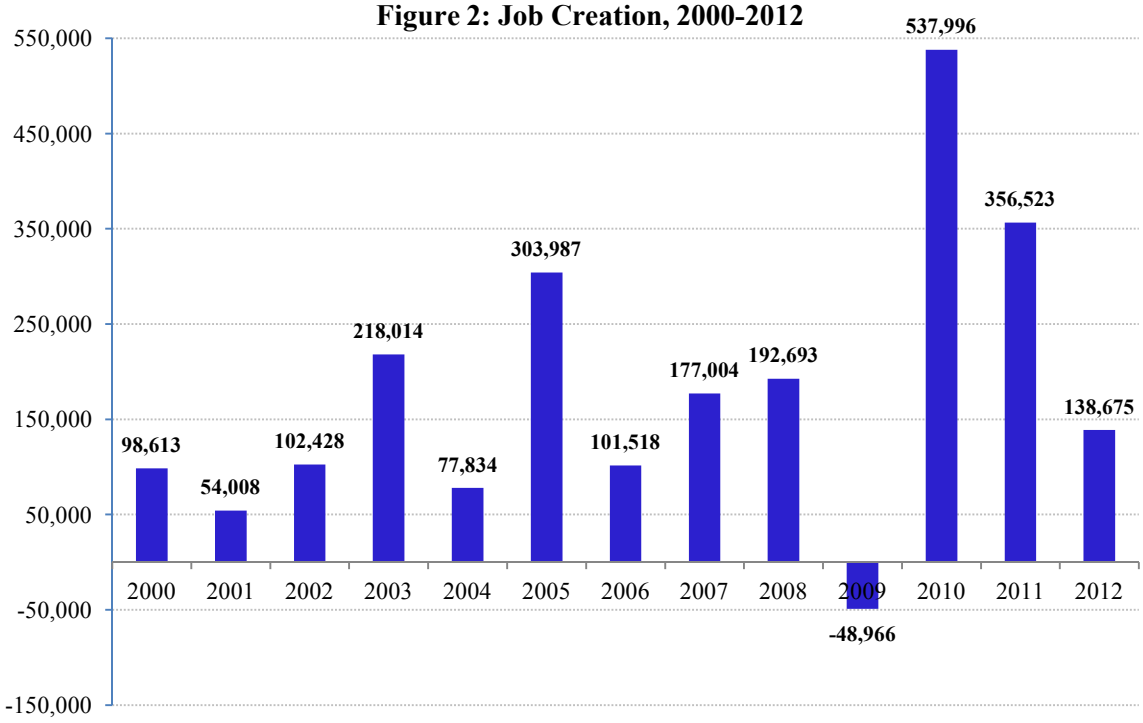
Figure 1: Unemployment Rate (%), 1990-2012



Source: National Institute of Statistics of Chile. Note: From 1990 to 2006 we use the National Employment Survey (ENE) data and from 2010 to 2012 we use the New National Employment Survey (NENE) data.

On average, more than 2.3 million new jobs have been created since 2000, of which almost 1 million have been created under the current administration.

Figure 2: Job Creation, 2000-2012



Source: National Institute of Statistics of Chile (2010). Note: From 2000 to 2008 we use the National Employment Survey (ENE) data, and from 2010 to 2012 we use the New National Employment Survey (NENE) data.

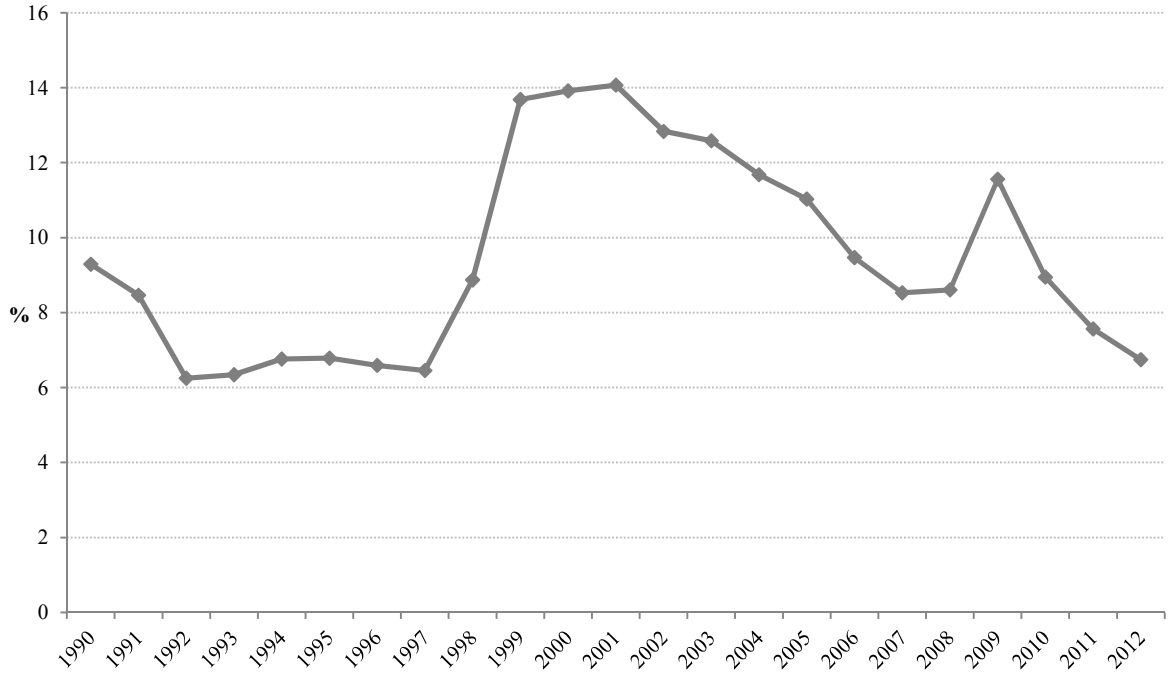
In April 2010, the National Institute of Statistics replaced the National Employment Survey (ENE), which had been in force since 1996, with the New National Employment Survey (NENE). Following the recommendations proposed by the OECD, the International Labour Organization (ILO), and the U.S. Bureau of Labor Statistics, the main goal of the new survey was to introduce a new methodology, similar to that used in developed nations, for measuring employment and unemployment rates and the inactivity of Chile's workforce, allowing international institutions to develop comparable studies. As a result of introducing international measurement standards, NENE's conceptual and methodological design includes updated concepts of employed and unemployed individuals, as well as a distinction between *traditional* and *nontraditional* employees.

The methodological changes introduced by NENE created some doubts about the conclusions that can be extracted from the new data. However, the main conclusions on unemployment trends and job creation remain unchanged when an alternative source of data is used.

The Employment and Unemployment Survey conducted by the University of Chile has not undergone any methodological changes since 2007. This survey shows that the unemployment rate in Santiago decreased from 10.8% in the first quarter of 2010 to 5.2% in the fourth quarter of 2012. Moreover, it also shows that during the same period 326,618 new jobs were created. Similarly, data from NENE show a decrease in the unemployment

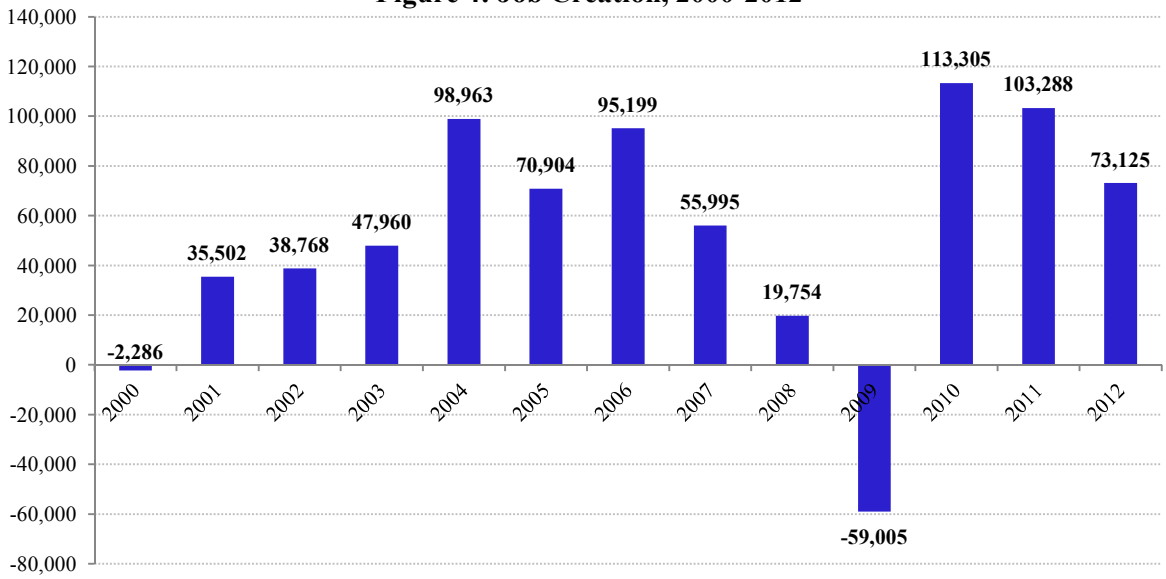
rate from 9.4% to 6.4% and a creation of 246,732 new jobs during the same period. This indicates that the same conclusions can be reached from both NENE and the University of Chile's survey. Figures 3 and 4 show the long-term trend followed by employment levels and the unemployment rate according to data from the University of Chile's survey. We observe again that the current labor market indicators are the most outstanding they have been in more than a decade. Therefore, we can rule out the idea that the strong job creation shown during the last three years is simply due to methodological changes introduced in NENE.

Figure 3: Unemployment Rate (%), 1990-2012



Source: Employment and Unemployment Survey, University of Chile. Note: From 1990 to 1996 we present the average annual unemployment rate for June and December. From 1997 to 2010 we present the average annual unnemployment rate for March, June, September, and December.

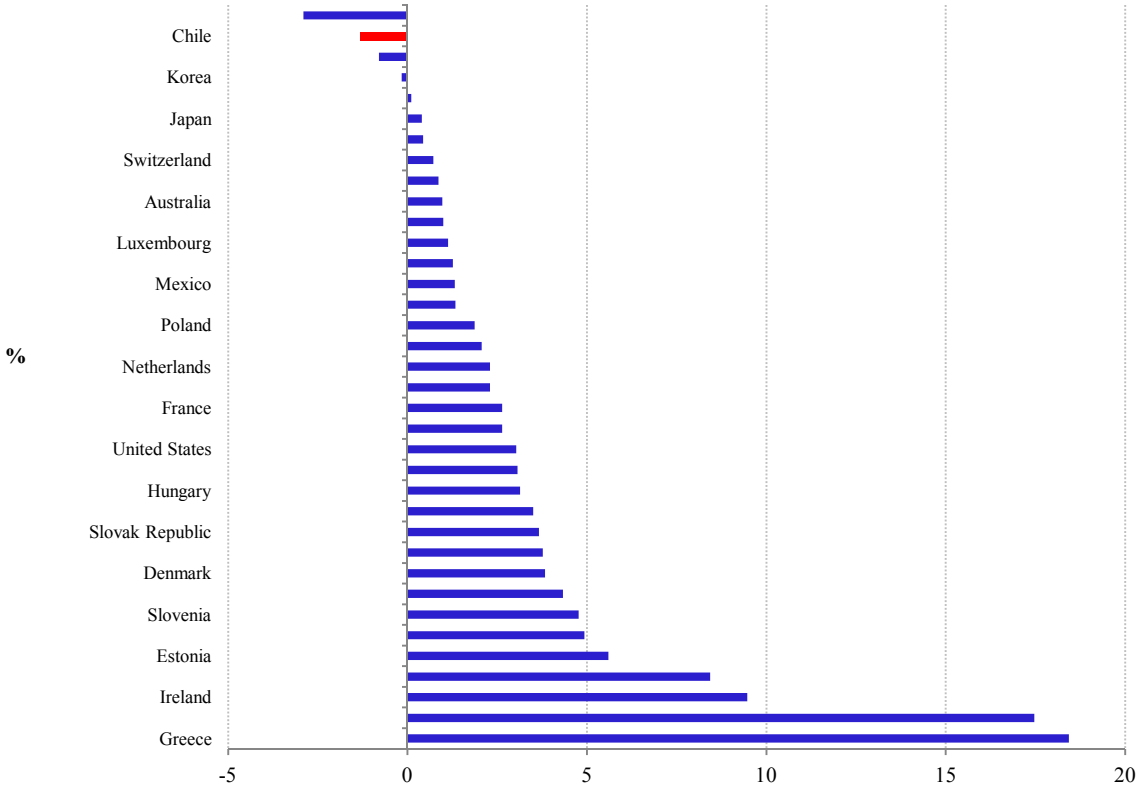
Figure 4: Job Creation, 2000-2012



Source: Employment and Unemployment Survey, University of Chile. Note: From 1990 to 1996 we use data for June and December and from 1997 to 2010 we use data for March, June, September, and December.

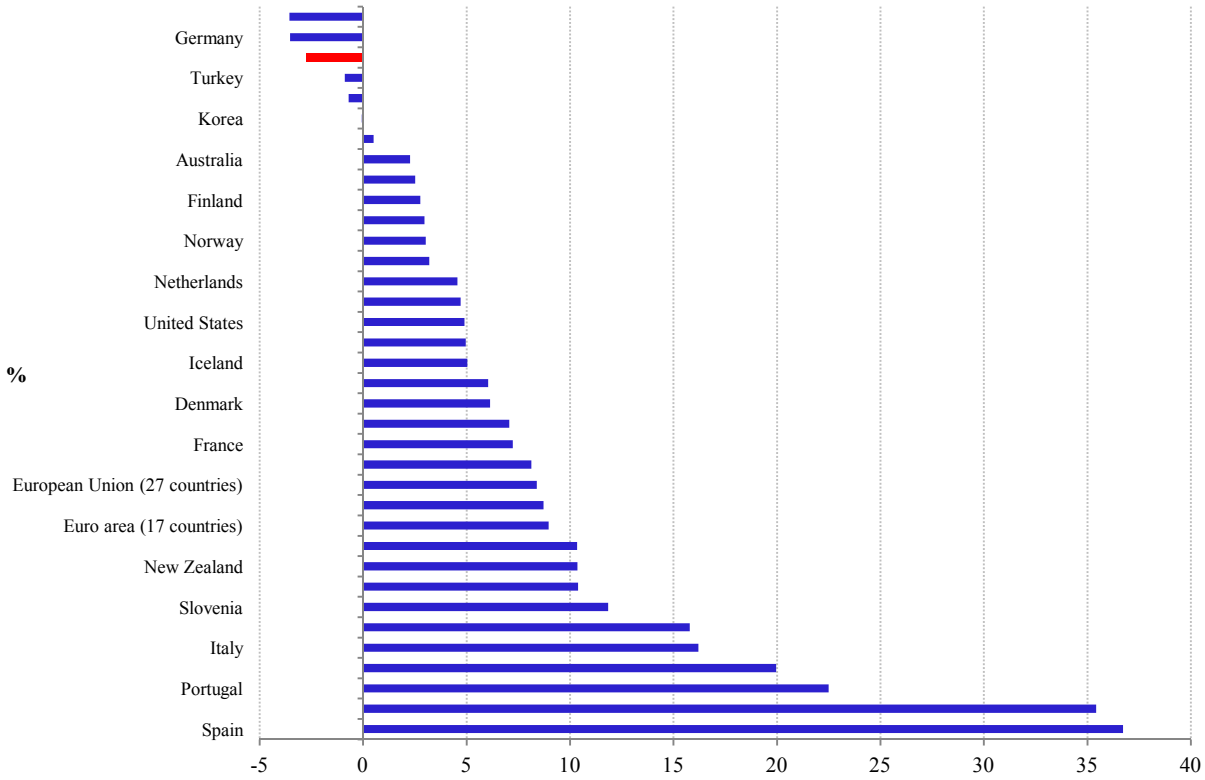
Figure 5 compares job creation in the Chilean economy with that in OECD economies. The figure shows the unemployment rates before and after the subprime crisis for OECD countries. Chile is one of the four countries that currently have achieved a reduction in their unemployment rates in relation to their levels before the crisis. Figure 6 shows the evolution of the youth unemployment rate for people between 15 and 24 years old. As shown in the figure, Chile is one of the six countries in which youth unemployment has decreased. The strong economic growth of the last three years and a labor market with relative high mobility partly explain the enormous success of the Chilean economy in terms of employment after the subprime crisis.

Figure 5: Differential Unemployment Rate before the Crisis and Its Last Value (%), Q4 2007 - Q4 2012



Source: OECD *Short-Term Indicators Database* (Cut-off date: April 17, 2013). Note: Q2 2007 for Switzerland.

Figure 6: Differential Youth Unemployment Rate before the Crisis and Its Last Value (%), Q4 2007- Q4 2012



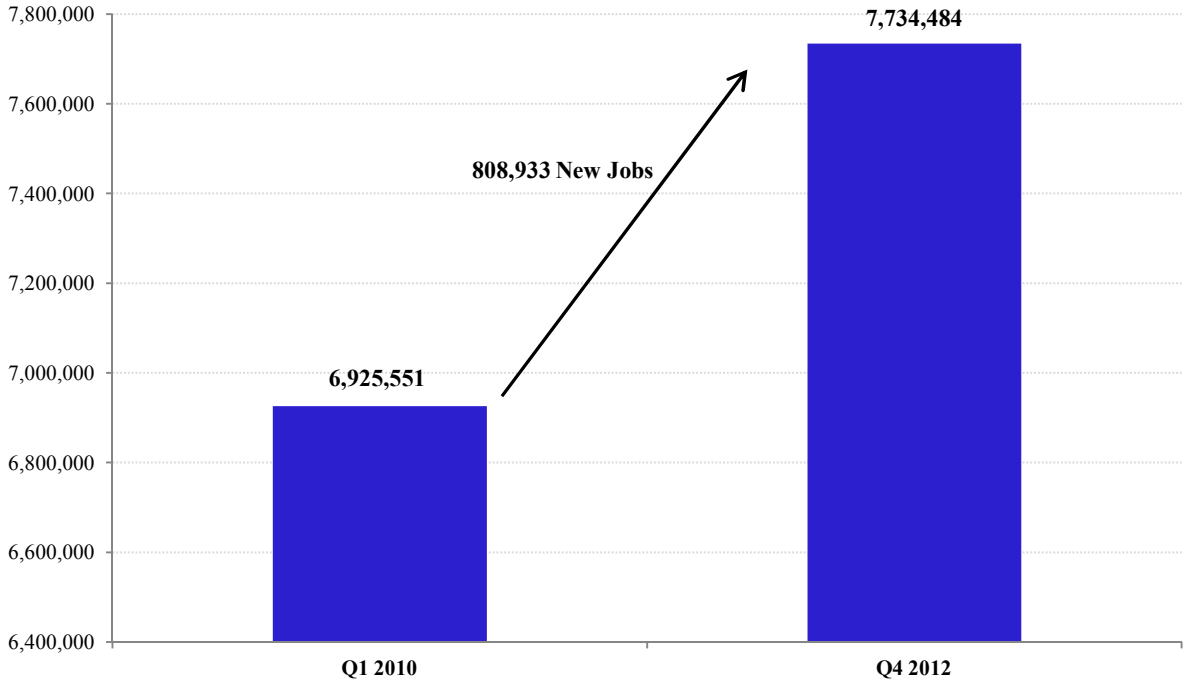
Source: OECD *Short-Term Indicators Database* (Cut-off date: April 17, 2013). Note: Q2 2007 for Switzerland.

1.2 Job quality

Methodological changes introduced by NENE could have affected the definition of protected employment. Considering that, we analyze the main trends of the indicators related with quality jobs for the period 2010 to 2012. As Figure 7 shows, from the first quarter of 2010 to the last quarter of 2012, 808,933 new jobs were created.[2] We analyze the quality of those jobs considering different indicators of quality.

[2] The first quarter of 2010 includes January, February, and March, and the last quarter of 2012 includes December 2012 and January and February 2013.

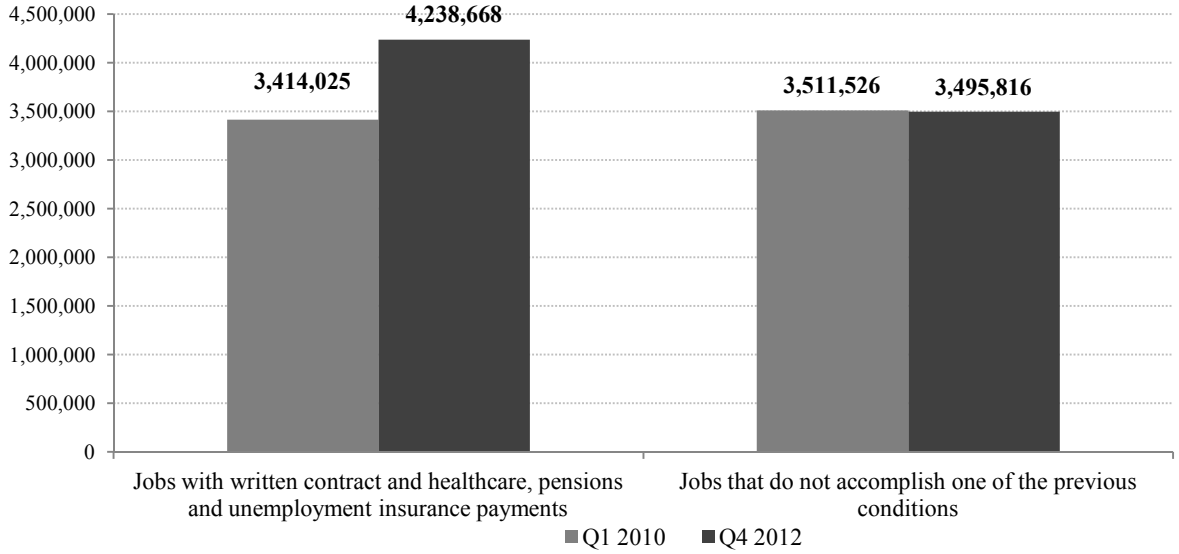
Figure 7: Job Creation, Q1 2010 - Q4 2012



Source: New National Employment Survey (NENE). Notes: Q1 2010 includes January, February, and March, and Q4 2012 includes December 2012 and January and February 2013.

A first element to consider is how many of the new jobs created correspond to protected jobs. We define protected jobs as those with a written contract and whose employers have made the corresponding payments toward pensions, healthcare, and unemployment insurance. Between 2010 and 2012, 824,643 new protected jobs were created. The difference between the number of total new jobs (808,933) and the number of protected new jobs (824,643) created during this period is explained by a composition change: the jobs that do not meet at least one of the criteria of a protected job decreased by 15,710 between 2010 and 2012. This means that there has been an increase in the number of protected jobs increased over the last three years and also a change in its composition (see Figure 8).

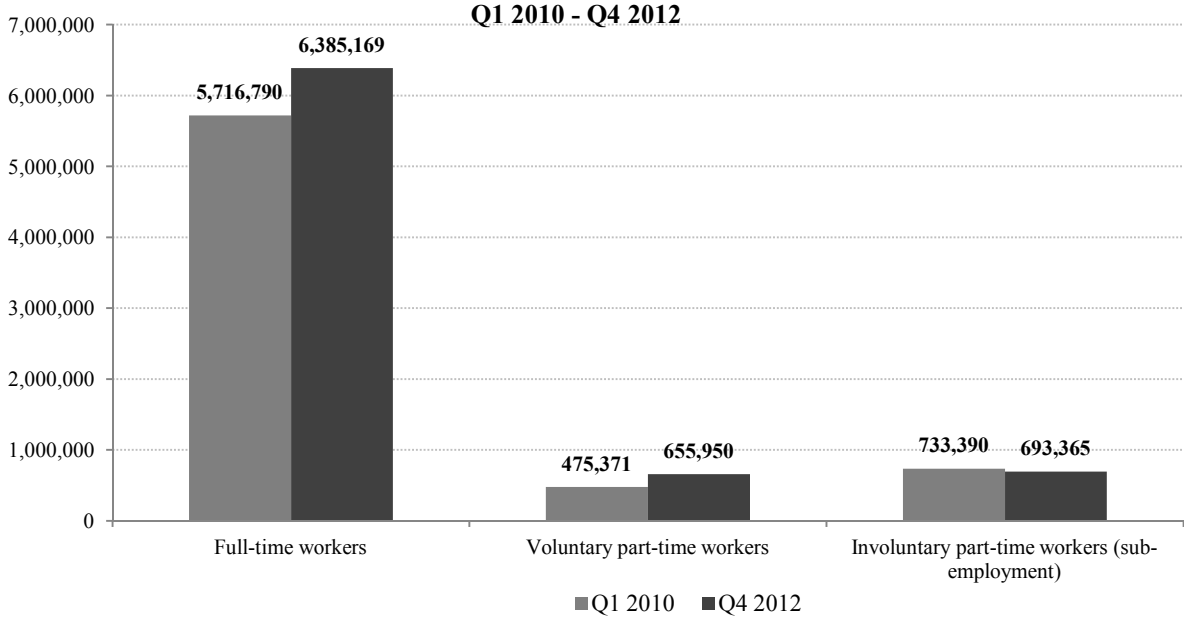
Figure 8: Composition of the Protected Job Creation, Q1 2010 - Q4 2012



Source: New National Employment Survey (NENE). Notes: Q1 2010 includes January, February, and March, and Q4 2012 includes December 2012 and January and February 2013.

From the perspective of the evolution of subemployment, the available information indicates a positive trend. According to the definition of the National Institute of Statistics, people with involuntary part-time jobs are those who work 30 or fewer hours per week and who are willing to work more hours immediately or during the next 15 days. Of the 808,933 new created jobs, 668,379 are full-time jobs and 180,579 are voluntary part-time jobs (in which the workers are not willing to work more hours). On the other hand, involuntary part-time jobs (subemployment) have decreased by 40,025 jobs (see Figure 9).

Figure 9: Distribution of job creation according to full and part-time work, Q1 2010 - Q4 2012

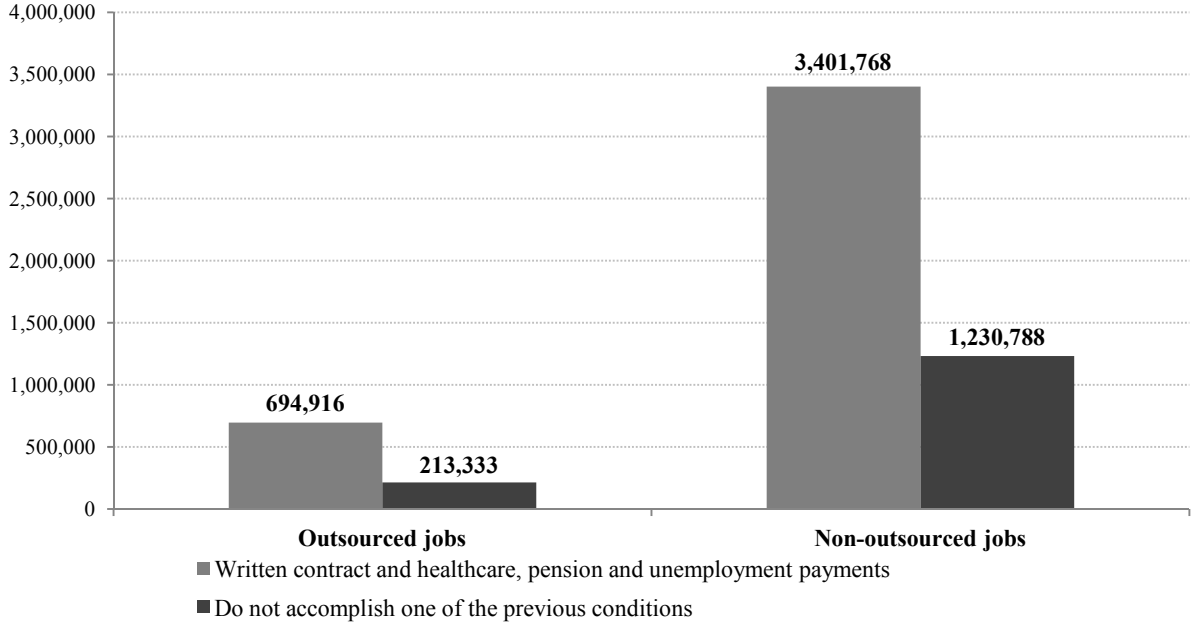


Source: New National Employment Survey (NENE). Notes: Q1 2010 considers January-February-March and Q4 2012 considers December 2012 and January-February 2013.

In relation to the evolution of outsourced employment (jobs in which there is no direct relationship between the employees and the enterprise they are working for), the data coming from NENE indicate that during the current administration outsourced jobs have increased by only 346,087 new jobs.

In this context, it is important to determine whether the increase in outsourced jobs is associated with a casualization of employment. To analyze this issue, it is necessary to determine whether outsourced jobs, in relation to non-outsourced jobs, present higher levels of informality, vulnerability, and subemployment. In the last quarter of 2012, 76.5% of outsourced workers had a written contract and healthcare, pension, and unemployment benefits. For non-outsourced workers, this figure reaches 73.4%, which means that there is no strong evidence that outsourced jobs have higher levels of informality or a lower level of social security benefits compared with jobs in which a direct relationship between employers and employees exists (see Figure 10).

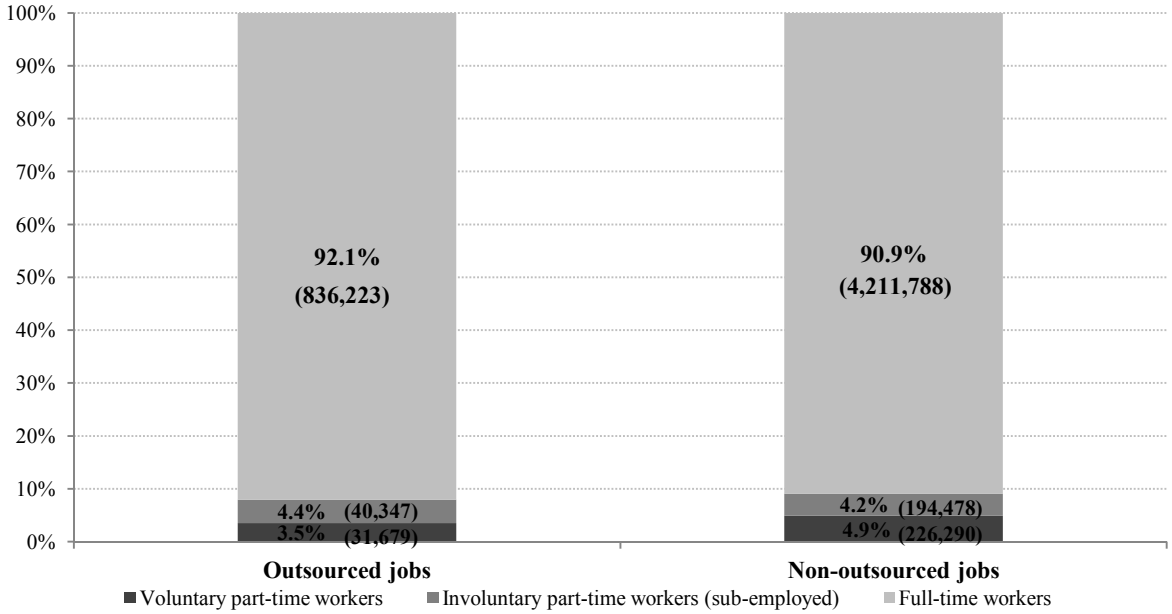
Figure 10: Quality of Outsourced and Non-Outsourced Jobs, Q4 2012



Source: New National Employment Survey (NENE). Notes: Q1 2010 includes January, February, and March, and Q4 2012 includes December 2012 and January and February 2013.

On the other hand, 4.4% of the workers with outsourced jobs are subemployed, while 4.2% of non-outsourced workers are involuntary part-time workers, which implies that, in practice, there is no difference between both groups (see Figure 11).

Figure 11: Distribution of employment according to full and partial job, Q4 2012



Source: New National Employment Survey (NENE). Notes: Q1 2010 includes January, February, and March, and Q4 2012 includes December 2012 and January and February 2013.

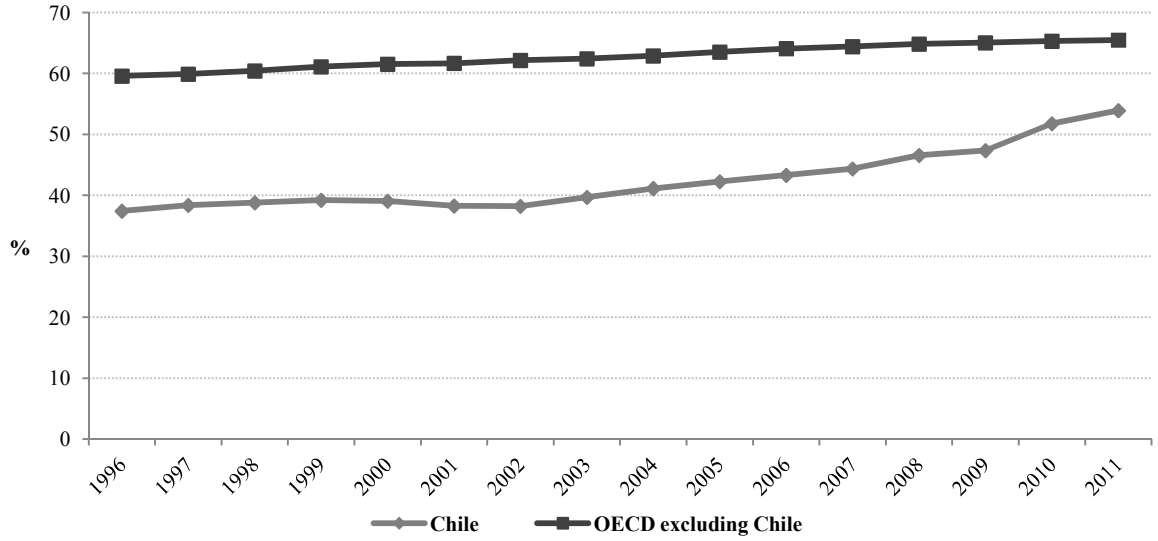
2. **Inclusiveness of job creation**

An important issue is how inclusive the job creation has been. We analyze some indicators related to the employment status of groups that generally have had lower participation in the labor market. In particular, we will analyze the evolution of the participation of women, young people, and socioeconomically vulnerable groups.

Women

Figure 12 presents the evolution of the female labor force participation rate for Chile and OECD countries (excluding Chile) from 1996 to 2011. We can observe that the labor force participation of women 15 to 64 years old has been converging to OECD levels since 2002. This trend has been markedly more pronounced during the last three years.

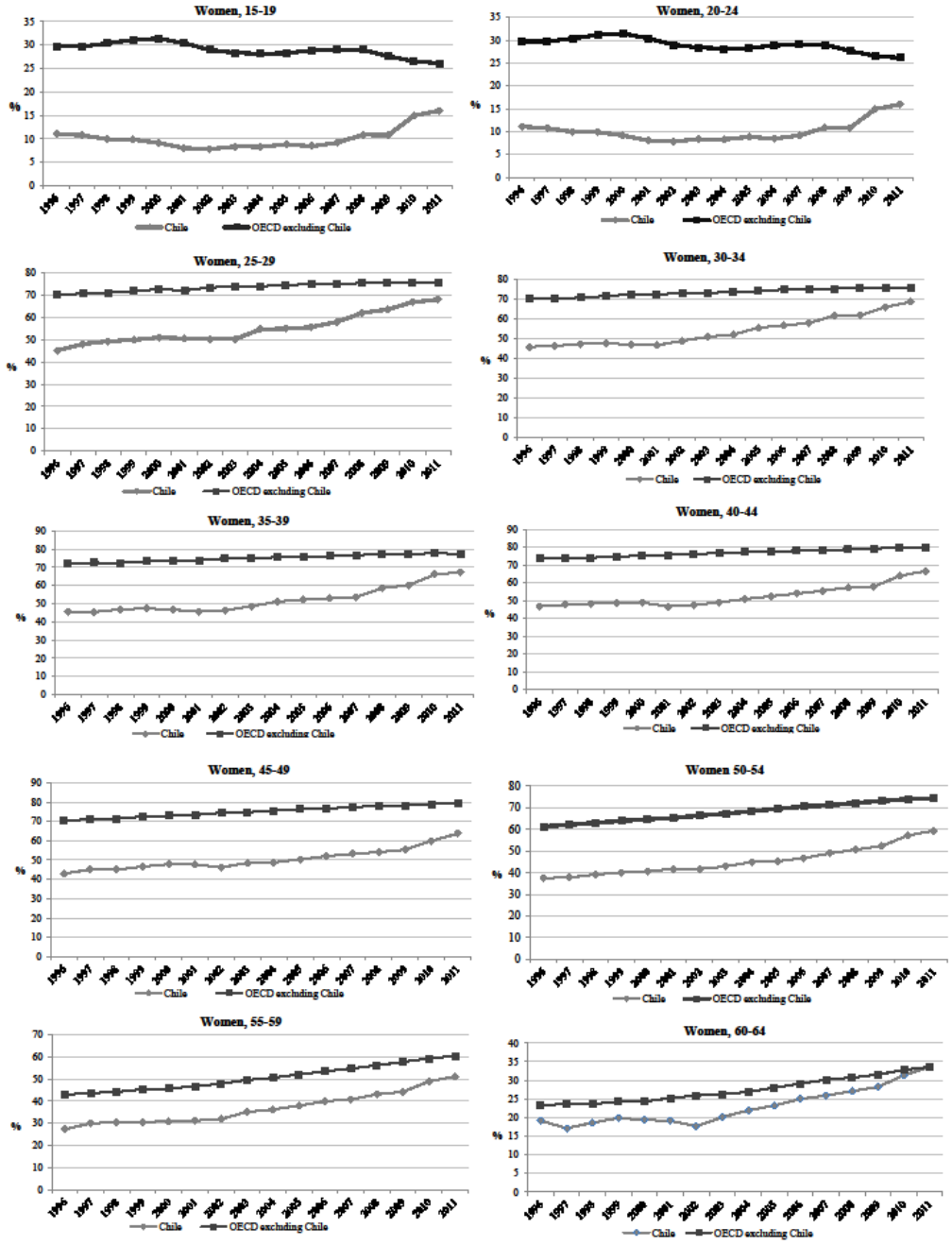
Figure 12: Female Labor Force Participation Rate (%), 1996-2011



Source: OECD Stats-Extracts. Note: Solovenia is included in 2002 in the average labor participation rate for OECD countries excluding Chile.

When we analyze female labor participation for different age groups, we observe a more marked convergence to OECD rates. In particular, for women between 25 and 39 years old, the gap between rates in OECD countries and Chile is, on average, just 8 points.

Figure 13: Female Labor Participation by age groups, 1996-2011



Source: OECD Stats-Extracts. Note: Solovenia is included from 2002.

Despite the fact that the female labor force participation rate has lagged in relation to the OECD level, it has grown faster in Chile than in the remaining OECD economies. In part, this is the result of two main factors.

First, the public policies and programs implemented during the past three years have facilitated women's entry into the labor market. Among the programs that have been implemented over the last three years, we can consider the following:

Extension of maternity leave to six months: This benefit allows women to extend their maternity leave up to 24 weeks from birth, in schemes of full-time to part-time work.

Subsidy to women's work: This benefit consists of a cash contribution to women between 25 and 59 years old who belong to the most vulnerable 30% of the population and who participate in the labor market. The amount of money received varies according to the annual income they receive for their work and is conditional on the payment of pensions and healthcare contributions.

Increase in childcare coverage: During 2012 and 2013, there was an increase in preschool enrollment equivalent to 25,000 children between 5 and 6 years old per year, twice that of the previous decade. Additionally, the government aims to ensure universal coverage in 2014 for children between 4 and 6 years old who belong to the most vulnerable 60% of the population and to increase the preschool coverage (children between 3 months and 4 years old) by 10,000 new spots per year for 2013 and 2014.

The Skills Development Program for women belonging to the Chile Solidario Program: This program funds training courses for the development of labor skills that allow vulnerable women between 18 and 55 years old to be incorporated into the labor market.

Second, in addition to the programs meant to promote female labor force participation, there are inherent forces behind Chile's economic development that encourage women to actively participate in the labor market. Those forces could explain the long-term increase in women's labor force participation.

First, as long as countries move toward higher levels of economic development, production moves from the manufacturing sector to the service sector. Women present comparative advantages in jobs that are less intensive in physical strength and more intensive in knowledge. Because the manufacturing sector is intensive in physical strength, the rise of the service economy is a primary reason through which economic development promotes opportunities for women in the labor market.

Additionally, technological change increases workers' productivity and, therefore, their salaries. Higher wages increase the opportunity cost of time for women and thus make motherhood more expensive. On the other hand, technological change is biased in favor of more qualified workers. This encourages mothers to have fewer, but more educated,

children. This is the so-called trade-off between quantity and quality of children, first documented by Becker and Lewis (1973): a lower birth rate releases women from the home, allowing them to participate actively in the labor market, which also encourages them to achieve higher levels of education and to delay the age at which they get married. And all those forces feed off one another.

Another element to consider is that technological changes increase the efficiency of services usually produced at home. For example, advances in home technology encourage the substitution of formal medical care for home medicine. This is another force that frees women from housework.

The technological revolution occurred not only in the market but also within the household. As Greenwood, Seshadri, and Yorukoglu (2005) document, the appearance of goods such as refrigerators, frozen food, and microwaves allowed women to produce the same home goods and services with less domestic time.

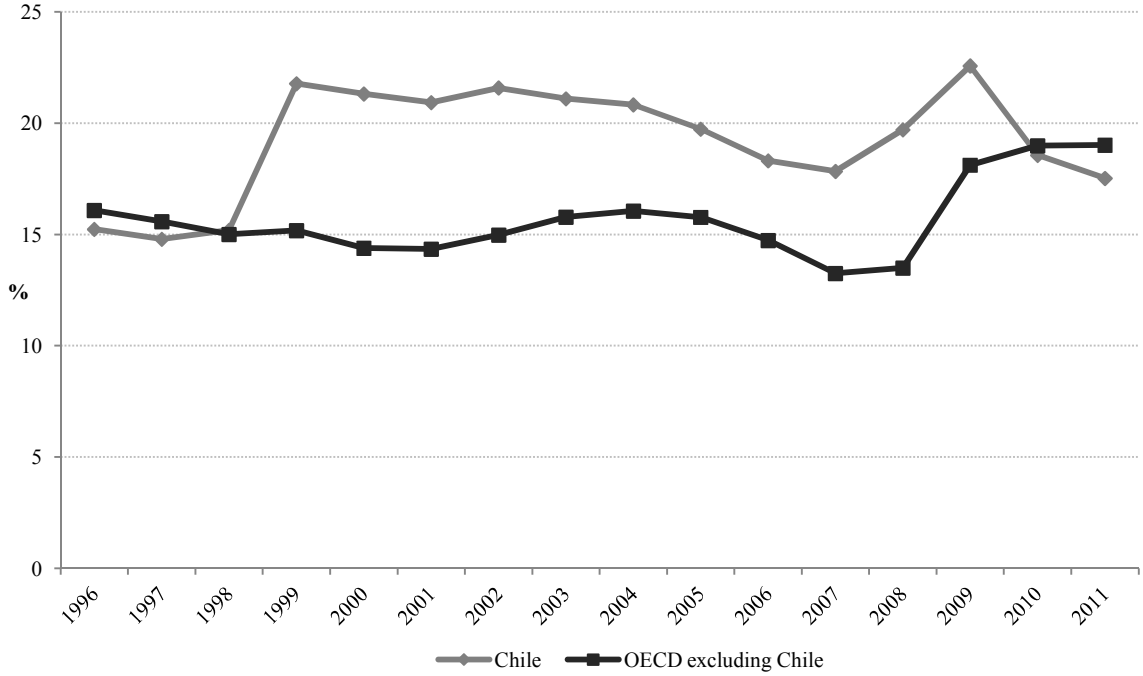
The forces previously described explain why we observe that as long as countries become more developed, women have fewer children, are more educated, delay marriage, participate more actively in the labor market, and achieve a higher level of empowerment in society.

Therefore, forces that go hand in hand with economic development explain the long-term increase in women's labor force participation in Chile. Those forces should continue operating in the coming decades; thus, we expect a higher level of female integration in the labor market in the future. In addition, as a complement to economic development forces, specific programs implemented during the last three years have accelerated the rise of women's labor force participation, as is evident from Figures 12 and 13.

Young workers

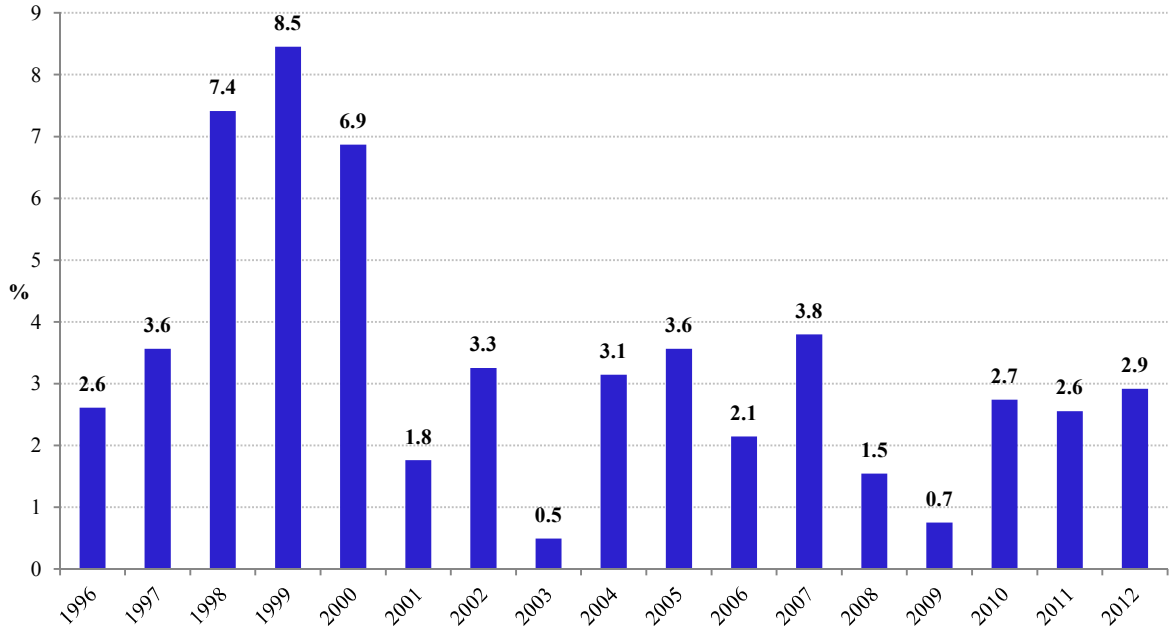
Before 1999, the youth unemployment rate (ages 15-24 years) was similar to OECD levels. It is interesting to observe, in Figure 14, the increase in the unemployment rate in 1999, which diverged from the OECD levels. The rise of the youth unemployment rate could be associated with the triennial increase in the minimum wage between 1998 and 2000. Figure 15 shows real increments of minimum wage increases between 1996 and 2012.

Figure 14: Youth Unemployment Rate (%), 1996-2011



Source: OECD Stats-Extracts. Note: Solovenia is included in 2002 in the average unemployment rate for OECD countries excluding Chile.

Figure 15: Real Growth of Minimum Wage, 1996-2012



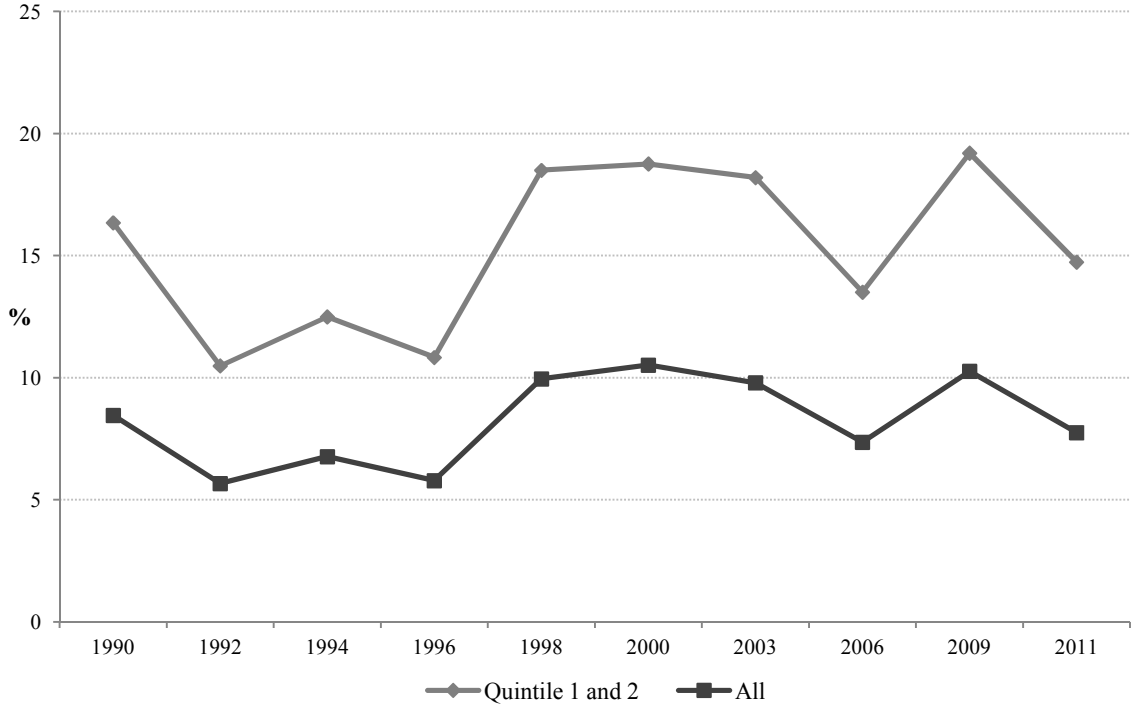
Source: National Institute of Statistics of Chile (2010).

Youth unemployment remained at high levels until 2003. From 2003 to 2007, we observe a downward trend. The subprime crisis interrupted the decline and led to an increase in the unemployment rate, which reached a historic level in 2009. Since then, the Chilean economy has experienced a steady decline in the youth unemployment rate as a consequence of strong economic growth. Youth unemployment has decreased to its lowest level of the last 13 years.

Vulnerable groups

As expected, the unemployment rate among vulnerable groups is higher than the average unemployment rate of the entire economy. Unemployment reached a peak after the subprime crisis. However, as is observed in other labor market indicators, since 2009 the unemployment rate of vulnerable groups has begun to decrease and, excluding 2006, it is the lowest it has been since 1996.

Figure 16: Unemployment Rate of the Most Vulnerable Groups, 1990-2011



Source: Socioeconomic Characterization Survey (CASEN).

3. Social inclusion, poverty and education: Three faces of the same problem

3.1 Economic growth, demand for skills, and income inequality

Economic growth is driven by several forces that directly affect the labor market. These forces, which we will describe in the following paragraphs, change the skills that are demanded by the labor market. Specifically, economic growth increases the demand for more educated workers. And a more educated labor force allows economies to catch up on the global technological frontier. Therefore, economic growth and investments in education feed off each other, producing a virtuous circle that allows countries to reduce both poverty and income inequality.

As countries develop, the service sector grows and the manufacturing sector shrinks. This structural transformation of economies moves labor from manufacturing to services. Given that the service economy is more knowledge-intensive and less physically intensive, the demand for skilled labor increases. In a recent paper published by Buera and Kaboski (2012), the authors document and analyze how technological change produced the rise of the service economy, a process resulting in an increased demand for more educated workers in the U.S. economy.

Additionally, there is vast empirical evidence that documents that technological change is skill-biased. That is, technological improvements increase the relative productivity of more skilled workers, which also increases the relative demand for those types of workers. This is the so-called *skill-biased technological change* that has been documented by Katz and Murphy (1992); Berma, Bound, and Machin (1994); Borjas, Freeman, and Katz (1997); and Acemoglu (2002). For Chile, Gallego (2012) also documents that the technological change has been biased toward more skilled workers.

Another force that goes hand in hand with economic development and that affects the relative demand for different types of workers is trade liberalization. A traditional trade theorem, the Stolper-Samuelson effect, predicts that as countries open to international trade, developed countries will specialize in goods whose production is more intensive in skilled workers, while less developed countries will specialize in goods that require less skilled workers. The main prediction of these models is that the demand for skilled workers should rise in developed countries and decrease in less developed countries.

However, in developing countries there is a second force that counterbalances the Stolper-Samuelson effect. This force is the *capital-skill complementarity*, which means that capital is more complementary to more educated workers. When economies increase imports of capital goods, the relative productivity of more educated workers rises and, consequently, the relative demand for these workers increases. Internationally, the hypothesis of capital-skill complementarity is supported empirically by the seminal work of Krusell, Ohanian, Rios-Rull, and Violante (2000). In a recent paper, Correa, Parro, and Lorca (2012) empirically confirm the existence of capital-skill complementarity in the Chilean economy.

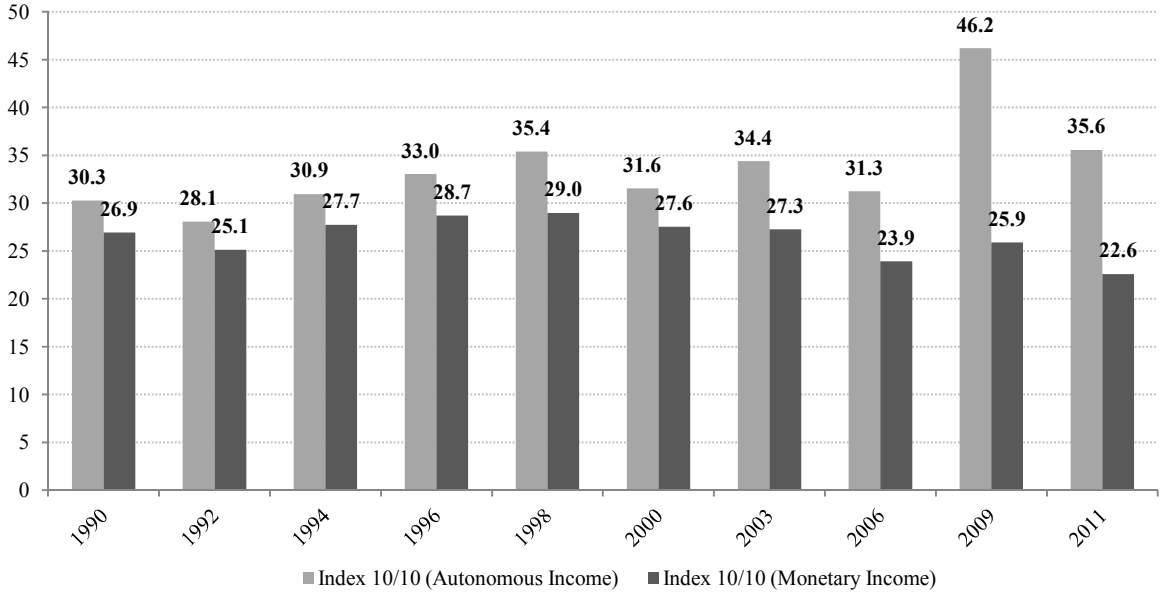
All the previous forces increase the relative productivity of more educated workers and, thus, the relative demand for those workers. At the beginning of the process, the response

of the supply is slow; therefore, the returns to education rise—specifically, the college wage premium in the labor market. Higher returns to education increase income inequality, which raises the argument that economic growth is not inclusive. That is, economic growth raises the earnings of more educated workers, and thus, it is argued, only the most advantaged groups of society benefit from economic growth. This view is only partially true.

The initial increase in income inequality is moderated (or even reversed) as long as, encouraged by the higher returns to education, more individuals start investing more in education. This process is accelerated when countries implement policies that allow talented low-income individuals to access higher levels of education and thus participate in the benefits of economic growth. For example, in Chile, after a sharp increase in income inequality in the 1980s and 1990s (Gallego 2012), income inequality has started to fall and is lower among recent generations of young people, as demonstrated by Sapelli (2011). Additionally, an OECD report[3] shows that in Chile, the income of the poorest decile grew by 2.4% annually, while the income of the richest decile increased only by 1.2%.

Additionally, using data from the Socioeconomic Household Survey (CASEN), we achieve the same conclusions. We can observe that the ratio between the income of the richest decile and the poorest decile has showed a decreasing trend over the last three years (see Figure 17).

Figure 17: Index 10/10, 1990-2011

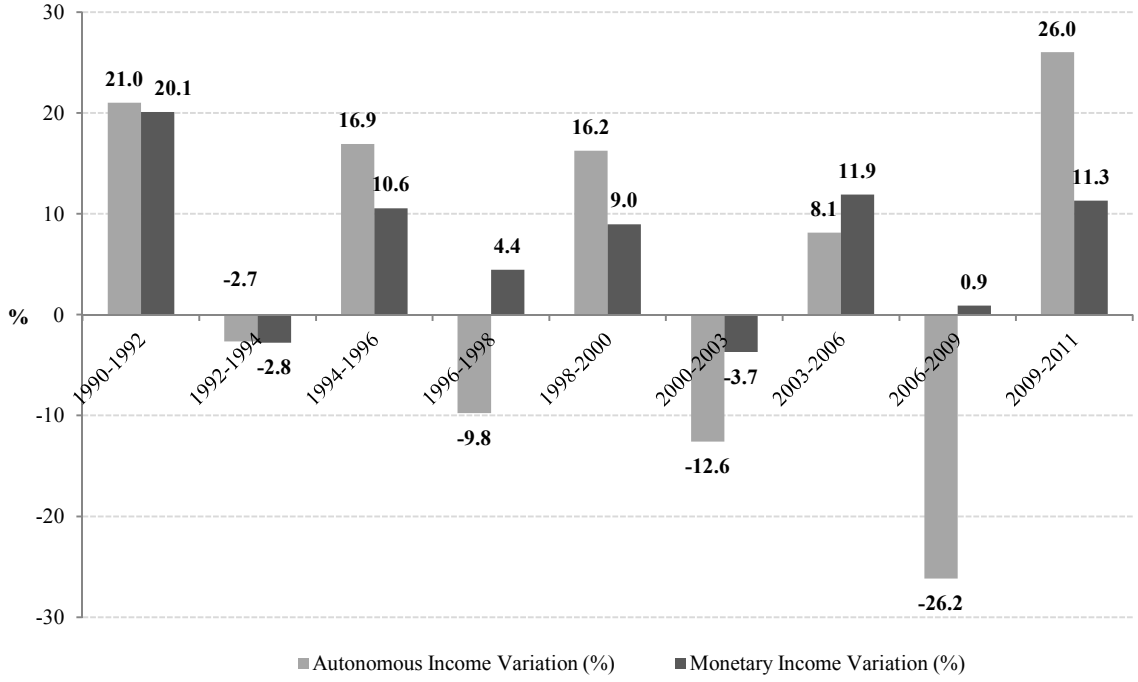


Source: Socioeconomic Household Survey (CASEN). Notes: Autonomous Income includes salaries and wages, earnings from self-employment, self-provision of goods produced by the household, allowances, bonuses, rents, interest and retirement, pensions, widow's benefits, and private transfers. Monetary Income includes autonomous income and cash contributions from the state distributed to individuals and households through social programs.

[3] OECD (2011).

Figure 18 presents the income growth rate of the poorest households from 1990 to 2011 using CASEN data.[4] As we can observe, during the period 2009-2011 the autonomous income[5] experienced the highest variation in comparison to the previous periods. For the same period the monetary income[6] shows a positive variation comparable to the variation experienced during 2003-2006, representing the third highest variation from the period 1990-1992.

Figure 18: Income Growth Rate of the Poorest Households (1 Decile), 1990-2011



Source: Socioeconomic Household Survey (CASEN). Notes: Autonomous Income includes salaries and wages, earnings from self-employment, self-provision of goods produced by the household, allowances, bonuses, rents, interest and retirement, pensions, widow's benefits, and private transfers. Monetary Income includes autonomous income and cash contributions from the state distributed to individuals and households through social programs.

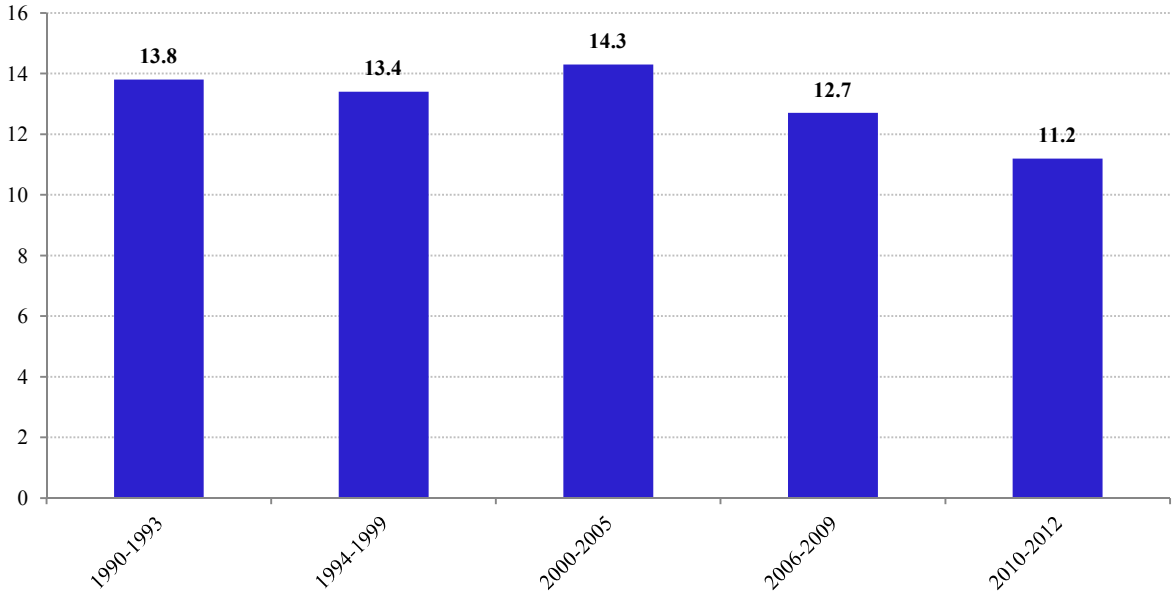
Additionally, Figure 19 presents the index 20/20 for per capita labor income. As this figure shows, the ratio between the labor income of the richest and the poorest quintile has decreased in the last 12 years (excepting the period 2000-2005), reaching its lowest value during the current administration.

[4] In order to compare household incomes for different years, we express the initial comparison year in terms of the final year of comparison's currency, using the Consumer Price Index of November of each year. For example, for the 1990-1992 period, we express the household income of 1990 in terms of 1992 currency and calculate the variation (%) between these figures.

[5] It includes salaries and wages, earnings from self-employment, self-provision of goods produced by the household, allowances, bonuses, rents, interest and retirement, pensions, widow's benefits, and private transfers.

[6] It includes autonomous income and cash contributions from the state distributed to individuals and households through social programs.

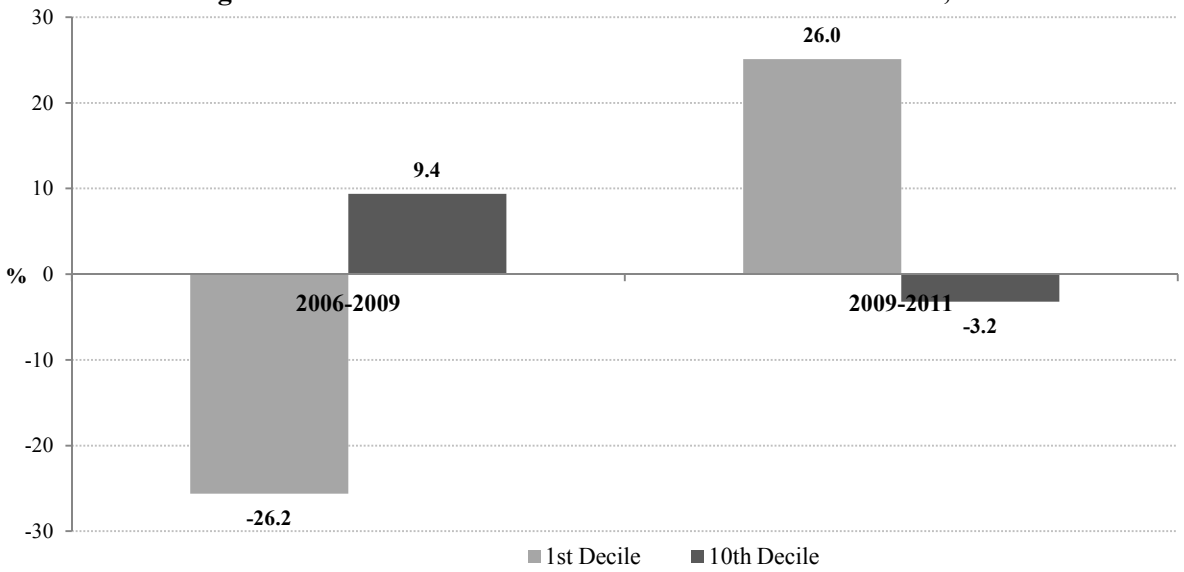
Figure 19: Per Capita Labor Income Index 20/20, 1990-2012



Source: Income Survey for Santiago, University of Chile.

Figure 20 presents the autonomous income growth rate for the first and tenth deciles during 2006 and 2011 using CASEN data. As these figure shows, during 2009 and 2011 the income growth rate of the first decile has experienced an enormous growth in comparison to the 2006-2009 period. In contrast, the income growth rate of the tenth decile has decreased from 9.4% in 2006-2009 to -3.2% during 2009-2011.

Figure 20: Autonomous Growth Rate for 1st and 10th decile, 2006-2011



Source: Socioeconomic Characterization Survey (CASEN).

Therefore, we observe that the increasing trend in income inequality during the last three years has begun to revert. From a short-term perspective, the strength of the labor market, where the probability of being unemployed is lower than in the previous year and wages are higher even for more vulnerable groups (as shown in previous figures), is an important force behind the slight reversion of inequality.

However, as discussed in this section, long-term forces inherent to economic development have changed and will continue changing the types of skills demanded in the labor market. The result of this process is an increase in the returns to education. Therefore, the only way of making the incipient decline of inequality observed in the previous figures sustainable is by facilitating access to education for more vulnerable groups. In this way, those groups will be able to reap the higher returns to education, and the incipient trend observed in Figures 17-19 would become a long-term trend.

The potential generated by the large returns to higher education extends from individuals to the economy as a whole, creating a virtuous circle, where more educated people generate more wealth for the economy and society. Higher returns to education promote a greater investment in education, accelerate economic growth, and promote improvements not only in the standard of living among more educated workers, but also among lower-income groups. A growing economy creates jobs, and employment is one of the best antidotes against poverty.

Therefore, in order to make economic growth inclusive and sustainable over time, countries must improve opportunities for the most vulnerable young people to enter and complete higher education. Investment in education at early ages, that is, when the skills are still malleable, is essential. More and better preschool education doubly impacts the reduction of inequalities; it allows new generations to take advantage of the opportunities that a growing economy offers them and, in the short term, allows the incorporation of their mothers into the labor market, adding their salaries to the household income. The incorporation of women into the labor force also promotes economic growth because it adds more inputs to the production process of countries.

Additionally, it is essential to encourage access to higher education for talented students who do not have the economic resources to fund it. Such types of policies also make the economic growth more inclusive.

3.2 Education: Policies and key trends

During the last three years, the Chilean government has made significant efforts to increase vulnerable students' access to education and to establish an institutional framework to regulate the education market. Among the main policies promoted by the Chilean government, we can consider the following:

- Institutional improvements to post-secondary institutions: In 2011, the Chilean government created the Superintendencia de Educación Superior, an organization designed to oversee higher education institutions.

- Creation of the Superintendencia and the Agencia de Calidad de la Educación: The first corresponds to a public organism targeted to oversee the compliance with the educational standards and the legality in the use of the resources granted by the government to establishments. Also, the Superintendencia will inspect establishments about the compliance with infrastructure and security standards and that the staff and teachers have their wage and payment contributions on time. The primary purpose of the Agencia is to evaluate and guide the education system in order to ensure the quality and equity of educational opportunities. Additionally, the Agencia must inform families about the educational performance of the establishments and their students and provide guidance to improve areas of poor performance.

- Improvements to the teaching profession: At the beginning of 2013, the Ministry of Education submitted a bill to the Congress to modernize the teaching profession, introducing a new framework of conditions and benefits to attract and retain the best teachers in the public system. As Correa, Parro, and Reyes (2012b) show, in the Chilean education system there are two different legal frameworks regulating teachers' salaries that segment the market into two sectors and produce a negative selection in the market of public schools. On the one hand, in the public sector there is a very rigid wage structure heavily based on experience and training courses, with almost no compensation linked to teachers' performance in the classroom. On the other hand, in the private sector there are flexible rules for hiring, firing, and setting salaries, producing a high wage dispersion. Therefore, that flexible wage scheme encourages good teachers to work in private schools because the likelihood of earning higher wages is higher than in public schools. This explains why negative selection is observed in the Chilean case. In this context, the initiative establishes new requirements for teachers who want to work in public schools and establishes a new mixed system of teacher evaluation based on the measurement of knowledge and skills and the teacher's performance in the classroom. Finally, the initiative establishes a minimum wage increase for teachers and incentives for those who perform well in the classroom.

- Increases in the amount of resources given by the Preferential School Subsidy: In 2008, the Chilean government introduced a conditional voucher that aims to improve the quality of education by giving an additional per-student subsidy to schools that voluntarily enroll vulnerable students, the so-called Preferential School Subsidy (Subvención Escolar Preferencial). These additional resources are contingent on the completion of specific goals mainly related to the management of their human and technical resources and the improvement of their academic performance. Additionally, schools must accept vulnerable students and are not allowed to charge a co-payment. As Correa, Parro, and Reyes (2012a) document, the Preferential School Subsidy has a positive and significant effect on standardized test scores and highlights the importance of conditioning the delivery of resources to some specific academic goals where there are frictions in the education market. During 2012, the government introduced modifications to the amount of resources given by the Preferential School Subsidy. The amount of resources delivered to

students attending the fifth and sixth grades was equalized with those of students attending preschool and the fourth grade. Additionally, the resources for students from the seventh to twelfth grades were doubled.

- Increase in childcare coverage: One of the Chilean government's main goals is to increase preschool coverage, especially for children between 5 and 6 years belonging to the most vulnerable 60% of the population, for whom universal coverage is expected by 2014. To achieve this goal, during 2012 and 2013 the government is increasing the enrollment by 25,000 children per year. Additionally, for children 3 months to 4 years, the government is expected to increase the enrollment by 10,000 per year in 2013 and 2014. The government is also studying modifications to the child care vouchers given to working mothers with children between 0 and 2 years. In particular, it is analyzing to extend vouchers to working mothers with children between 0 and 2 years old.

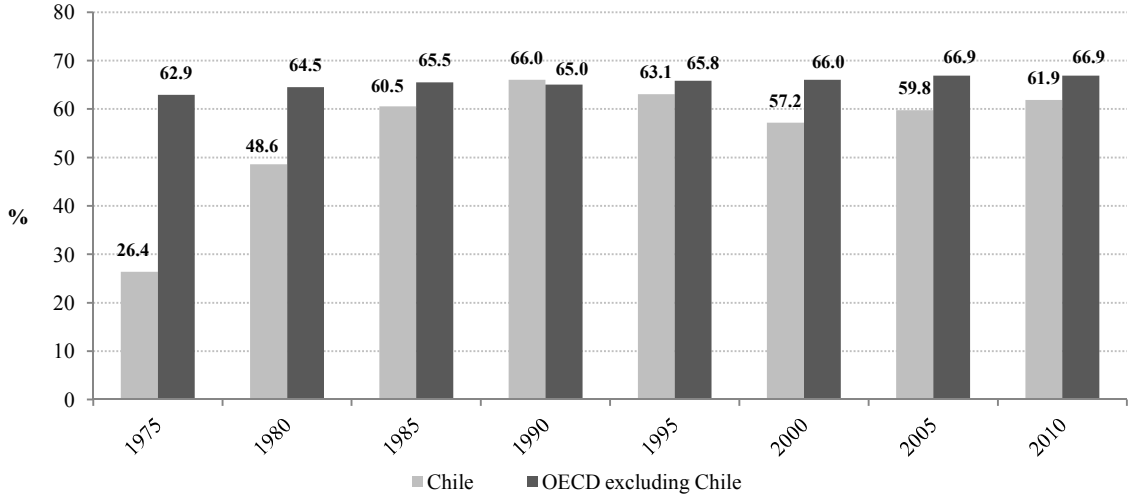
- Increase in the amount of scholarships to fund tertiary studies of the most vulnerable 60% of the population: In 2012, for the first time, the government provided scholarships to the most vulnerable middle-class students who enter higher education institutions, which benefitted 280,000 students, twice the number of students who benefitted from scholarships in 2011. Additionally, it was established that the most vulnerable students will have different eligibility requirements to access the scholarships, such as a lower score on the test for admission to higher education institutions (Prueba de Selección Universitaria).

- Reforms to the student loan system to fund post-secondary studies: In 2012, the government submitted to the Congress a bill to introduce modifications to the post-secondary loans system, the Crédito con Aval del Estado. As a result, loan repayment was established contingent on the student's income after graduation, with a maximum payment period of 180 months. Additionally, the annual interest rate was reduced from 6% to 2% annually, which implies an approximately 40% reduction in the monthly payments made by students after they graduate from higher education.

Those policies, along with the increased returns to higher education, will continue encouraging and allowing more individuals to invest in education.

Figures 21a-c show the percentage of the population between 30 and 34 years old with primary, secondary, and tertiary education in Chile and in OECD countries excluding Chile. As we can see in all panels, Chile's levels converge to OECD levels, especially for primary education, where the gap between Chile and OECD countries has been decreasing over time.

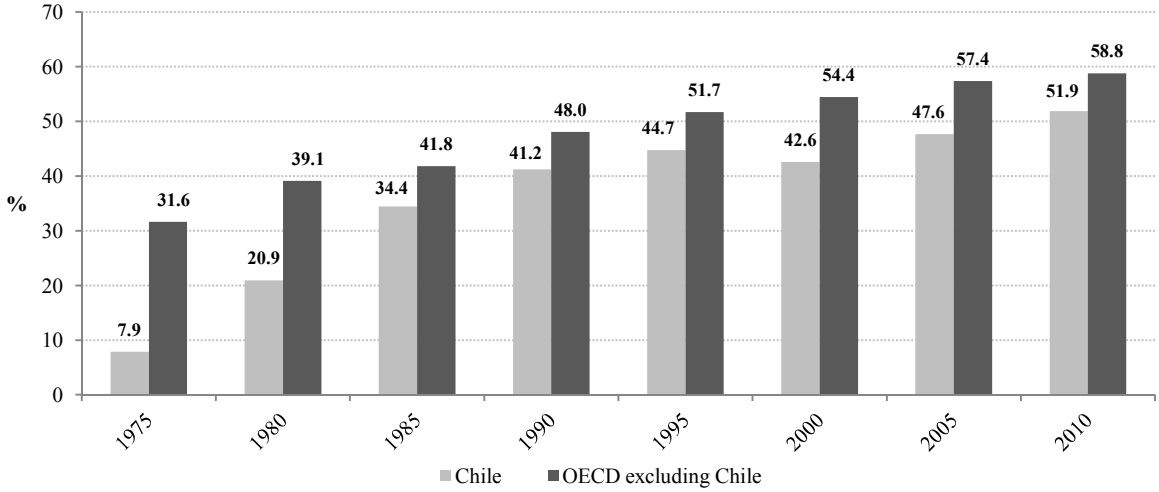
Figure 21a: Percentage of 30- to 34-Year-Olds with Completed Primary Education, 1975-2010



Source: Barro and Lee (forthcoming).

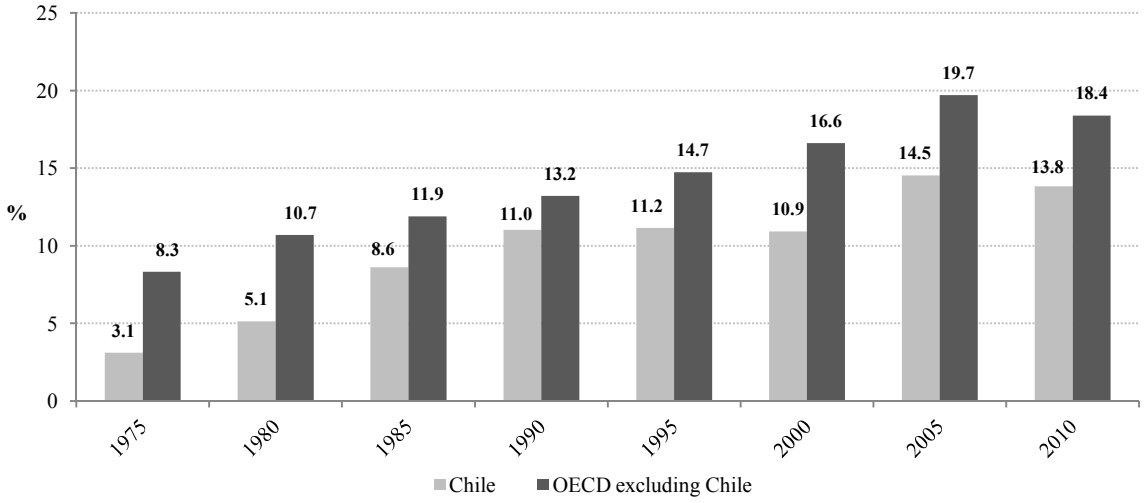
Figures 21b and 21c show the percentage of individuals between 30 and 34 years with secondary and tertiary education. As these figures shows, Chile exhibits a clear convergence trend to OECD levels.

Figure 21b: Percentage of 30- to 34-Year-Olds with Completed Secondary Education, 1975-2010



Source: Barro and Lee (forthcoming).

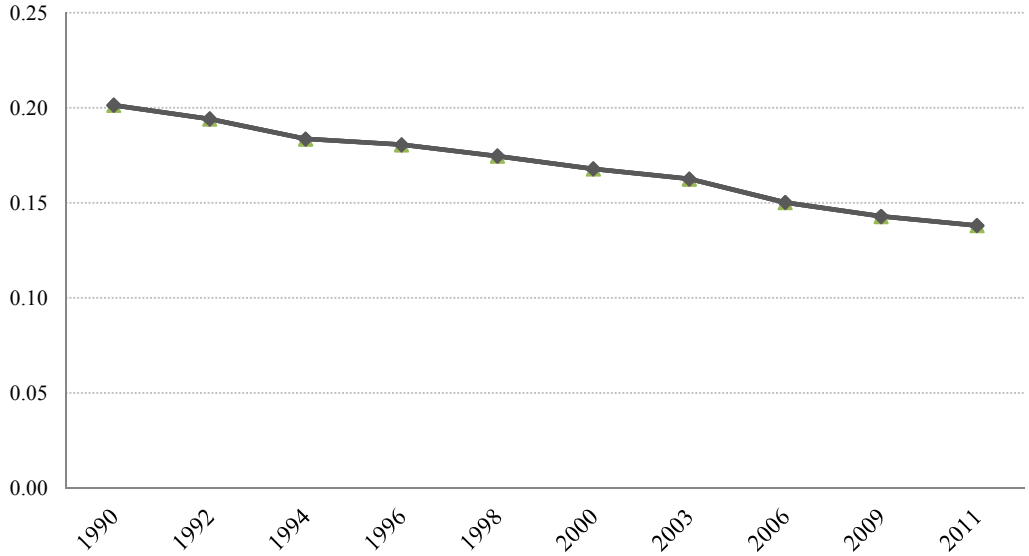
Figure 21c: Percentage of 30- to 34-Year-Olds with Completed Tertiary Education, 1975-2010



Source: Barro and Lee (forthcoming).

The higher educational attainment is, in general, driven by more vulnerable groups, who are more likely to access higher education levels than they were in the past. We calculate the Gini coefficient using the average years of schooling for people between 25 and 35 years, using CASEN data. As we can observe from Figure 22, during the last 10 years, there has been a reduction in the inequality of access to education. As was discussed previously, more access to education for vulnerable groups should be mapped in a decline in income inequality, a phenomenon that we have begun to observe in the Chilean economy, as is evident in Figures 17-19.

Figure 22: Gini Coefficient: Years of Schooling for 25- to 35-Year-Olds, 1990-2011

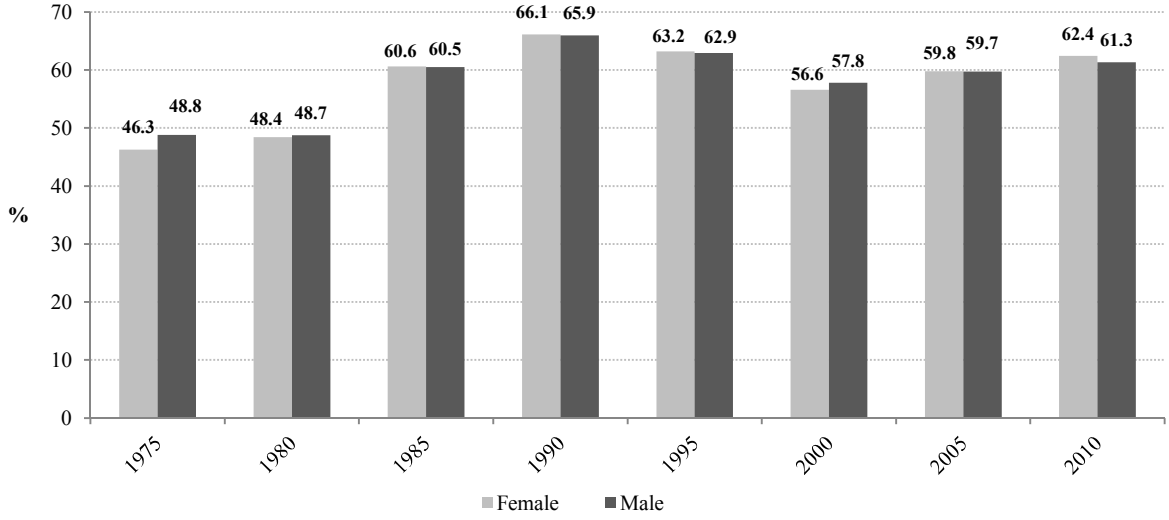


Source: Socioeconomic Characterization Survey, CASEN.

3.3 The boom in the education of women

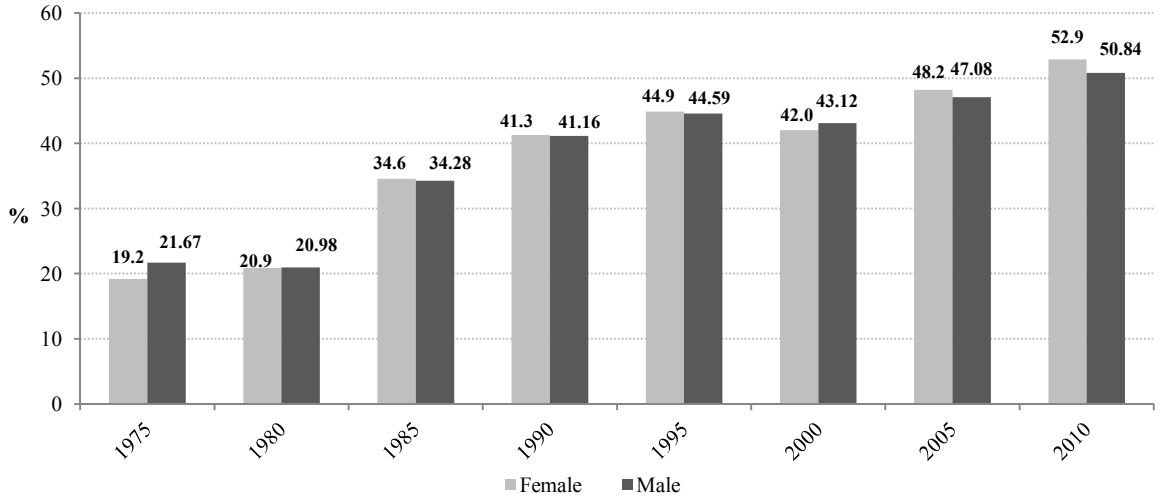
Economic growth and job creation will also be more inclusive for women if they can access different education levels at a higher rate. When observing what has happened with the gender gap in education in Chile, we find some very interesting patterns. As Figures 23a-c show, the educational gender gap has been decreasing over the last 35 years. For those who have completed primary education, the percentage of women between 30 and 34 years old is higher than the percentage of men in the same situation, while for secondary and tertiary education the gender gap has been decreasing, and even reversing for tertiary education in favor of women. This means that today, on average, women are more educated than men in comparison to 35 years ago. Therefore, Chile has participated in the worldwide boom in the higher education of women (see Becker, Hubbard, and Murphy 2010 and Parro 2012). The importance of this phenomenon is that economic growth has been more inclusive for women during recent decades. That is because women are acquiring skills that are increasingly in demand in the labor market.

Figure 23a: Percentage of 30- to 34-Year-Olds with Completed Primary Education by Gender, 1975-2010



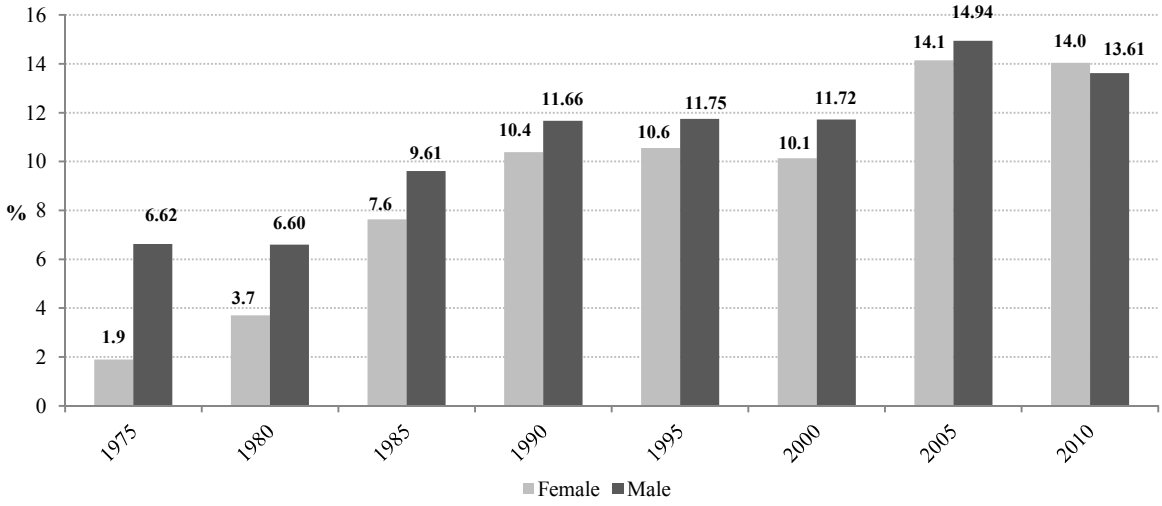
Source: Barro and Lee (forthcoming).

Figure 23b: Percentage of 30- to 34-Year-Olds with Completed Secondary Education by Gender, 1975-2010



Source: Barro and Lee (forthcoming).

Figure 23c: Percentage of 30- to 34-Year-Olds with Completed Tertiary Education by Gender, 1975-2010



Source: Barro and Lee (forthcoming).

3.4 Summary

To make economic growth more inclusive and sustainable, we must avoid redistributive policies that affect the efficiency of the economy and employment opportunities. With those types of policies, we could end up excluding precisely those groups that should be reaping the benefits derived from economic growth.

On the contrary, the policies that make economic growth both more inclusive and sustainable include those that aim:

- **To have a more educated workforce**: This is accomplished by providing access to education to the most vulnerable groups. As Nobel Prize winner James Heckman has documented, early interventions in human capital are more effective. Moreover, these policies promote economic growth and reduce income inequality.
- **To facilitate the incorporation of women into the labor market**: There are economic forces inherent in economic development that achieves the incorporation of women into the labor force. For example, in 1950 only 30% of women participated in the labor force in Chile. Today, almost 50% of Chilean women do. With few exceptions, we observed in almost all economies around the world a greater involvement of women in the labor market as long as the economies were developing. Those forces inherent in economic development must be complemented with social policies that foster women's integration in the labor market.
- **To make the labor market more flexible**: We must facilitate the movement of labor supply to sectors that demand more labor (i.e., the service sector). It is necessary to implement policies to make the labor market more flexible. For example, we must reduce severance costs and facilitate the flow of information between workers and employers. It is also necessary to have flexible working hours, which not only facilitate women's access to the labor market but also reduce the impact on unemployment during turbulent economic times.

4. **Unemployment benefits and employment protection**

Despite the enormous progress that Chile has experienced over the last three years, in terms of economic growth reflected in job creation and the significant improvements in social security and poverty reduction, the Chilean labor market still faces some challenges. Most of them are related to unemployment benefits and employment protection.

In 2002, Chile implemented a new unemployment insurance system based on individual accounts managed by a private fund manager, plus a state-financed solidarity fund. The system is essentially an obligatory savings scheme financed by a combination of contributions from workers (0.6% of total wages), employers (2.4% of total wages, 1.6% contributed to each worker's individual account and 0.8% contributed to the solidarity fund), and the state (approximately US$15 million per year contributed to the solidarity fund). The unemployment insurance system seeks to guarantee the availability of emergency income for unemployed workers who are in search of new employment and thus reduce consumption volatility and improve labor market stability. The system is designed to incentivize recipients to seek new employment, by setting a maximum of five monthly withdrawals, which become progressively smaller. As of December 2012, 7.5 million workers were enrolled in the system.

According to a 2012 OECD report, for many workers the amount of money accumulated in their unemployment insurance accounts is too low to ensure adequate unemployment benefits (OECD 2012). Moreover, most of the workers who are most likely to experience unemployment periods (for example, workers on fixed-term contracts and low-wage contracts) experience several periods in which they do not contribute insurance payments, which is mainly attributable to their constant movements into and out of the formal labor market. Additionally, compared to OECD countries, Chile exhibits the lowest average replacement rate over 60 months. In particular, the OECD report reveals that only half of the workforce affiliated with the system regularly contributes to their accounts. Another issue pointed out by the OECD report is related to the way workers use their unemployment insurance payments. In particular, the report establishes that, from the pool of workers who have the right to use their unemployment insurance, approximately 85% do not use it, mainly because they lack information about their benefits or because the cost of visiting the labor office is higher than the benefits of effective job service assistance. In 2011, the Ministry of Labor launched a campaign to provide information about the unemployment and pension benefits. In addition, the government is working on a reform to the unemployment insurance system that seeks to increase the benefits delivered to unemployed workers.

In addition to their employment protection challenges, the Chilean government has also identified the need to ensure safe working conditions. In particular, the government intends to improve labor conditions by reducing the accident rate to 4% and the mortality rate to five per 100,000 workers in the country by 2015, in order to reach the labor security standards of developed countries such as Portugal, Austria, France, and Germany. To achieve these goals, the current government has created the Committee of Ministers (Comité de Ministros) and the Consultative Council for Safety and Health at Work (Consejo Consultivo para la Seguridad y Salud en el Trabajo) and also has created Occupational Safety Regional Boards (Mesas Regionales de Seguridad) across the country. In addition, the government decided to ratify ILO Convention No. 187, which establishes a new framework for the promotion of a healthy and safe workplace. As a result of these measures, the labor accident rate decreased from 5.41% in 2010 to 4.88% in 2012. Although these figures present an improvement in labor conditions, the government is committed to achieving an accident rate of 4% by 2015.

Another employment protection challenge has been the improvement of labor conditions of temporary agricultural workers, especially women's labor conditions. In 2011, a bill was submitted to Congress to modify some articles of the Labor Code related to the regulatory framework of agricultural workers, in order to establish better working conditions and increase labor productivity.

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